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Thin-film battery with isolated inverter





Overview

A full integration of miniaturized transparent energy device (lithium-ion battery), electronic device (thin-film transistor) and sensing device (photodetector) to form a monolithic integrated microsystem greatly enhan.

What is a thin film battery?

The market for thin film batteries is being driven by demand for technologies based on the Internet of Things (IoT), wearables, and portable electronics. The layers that comprise the anode, cathode, and electrolyte in thin film batteries are true to their name, with thicknesses on the order of microns (0.001 mm).

How are solid thin-film batteries fabricated?

Two types of solid thin-film batteries are fabricated in this study: (1) thin-film battery using epitaxial LNMO film and (2) battery using a dense-LNMO layer. The schematics of each battery fabrication process are described in Figure S1b.

Are thin-film batteries integrable?

In addition, the thin-film battery can be perfectly adapted to individual application scenarios through possible stacking of individual cells, whereby the intrinsic mechanical flexibility enables integration on a wide variety of surfaces. Here, there are no limits to the integrability of the thin-film battery.

What are flexible thin-film batteries?

Flexible thin-film batteries in particular also have great potential in the field of consumer electronics or wearables. Due to their adaptable shape and robustness, they can be perfectly incorporated into clothing and serve as an energy source for any GPS trackers or ensure the power supply of smart gadgets.



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